

Correlations to Next Generation Science Standards



Article	Chemistry Concepts	NGSS Connections
<i>Bugs and the Future of Meat</i>	Structural formulas Functional groups Polymers Saturated vs. unsaturated	<p>HS-LS2-4. Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.</p> <p>HS-LS1-6. Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.</p> <p>Disciplinary Core Ideas:</p> <ul style="list-style-type: none"> LS2.B: Cycles of matter and energy transfer in ecosystems LS1.A: Structure and function <p>Crosscutting Concepts:</p> <ul style="list-style-type: none"> Structure and function Energy and matter Stability and change Systems and system models <p>Science and Engineering Practices:</p> <ul style="list-style-type: none"> Using mathematics and computational thinking Obtaining, evaluating, and communicating information <p>Nature of Science:</p> <ul style="list-style-type: none"> Scientific knowledge is based on empirical evidence. Science is a human endeavor.
<i>How Hair Removers Get Rid of Unwanted Fuzz</i>	Physical properties Intermolecular forces Molecular structure	<p>HS-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p> <p>HS-ETS1-3. Evaluate a solution to a complex real-world problem based on prioritized criteria and tradeoffs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.</p> <p>Disciplinary Core Ideas:</p> <ul style="list-style-type: none"> PS1.A: Structure and properties of matter PS2.B: Types of interactions ETS1.C: Optimizing the design solution <p>Crosscutting Concepts:</p> <ul style="list-style-type: none"> Structure and function Cause and effect

		<ul style="list-style-type: none"> Systems and system models <p>Science and Engineering Practices:</p> <ul style="list-style-type: none"> Asking questions and defining problems Planning and carrying out investigations <p>Nature of Science:</p> <ul style="list-style-type: none"> Science is a human endeavor.
<i>Can You Power Devices With Your Body?</i>	Electrons Electrostatic forces Electron transfer Valence electrons	<p>HS-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.</p> <p>HS-ETS1-2. Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.</p> <p>Disciplinary Core Ideas:</p> <ul style="list-style-type: none"> PS.1.A: Structure and Properties of Matter ETS1.B: Developing Possible Solutions <p>Crosscutting Concepts:</p> <ul style="list-style-type: none"> Patterns Cause and effect Stability and change Systems and System Models <p>Science and Engineering Practices:</p> <ul style="list-style-type: none"> Constructing explanations and designing solutions <p>Nature of Science:</p> <ul style="list-style-type: none"> Scientific knowledge assumes an order and consistency in natural systems.
<i>Bottled Water Wars</i>	Acids and bases pH Solutions Equilibriums Partial pressure Hydrogen bonding Ions	<p>HS-PS1-3. Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.</p> <p>Disciplinary Core Ideas:</p> <ul style="list-style-type: none"> PS1.B: Chemical reactions ETS1C: Optimizing the design solution <p>Crosscutting Concepts:</p> <ul style="list-style-type: none"> Stability and change Structure and function <p>Science and Engineering Practices:</p> <ul style="list-style-type: none"> Constructing explanations and designing solutions <p>Nature of Science:</p> <ul style="list-style-type: none"> Scientific knowledge assumes an order and consistency in natural systems.